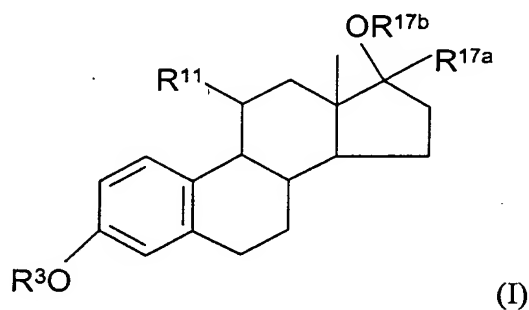


Amendments to the Claims:

1. (Not Entered, Currently Amended) An 11β -substituted estratriene of formula I



in which

R^3 means a hydrogen atom, a hydrocarbon radical with up to 8 carbon atoms or a radical of partial formula $R^{3'}-C(O)-$, in which $R^{3'}$ means a hydrogen atom or a hydrocarbon radical with up to 8 carbon atoms or a phenyl radical,

R^{11} means a radical of formula $-A-B-Z-R^{20}$,

in which

A stands for a direct bond, and

B stands for a straight-chain or branched-chain alkylene, alkenylene or alkynylene group with 4, 5 or 6 carbon atoms,

Z stands for $-NR^{21}-$ and R^{21} stands for a C_1 - C_3 alkyl group,

whereby R^{20} means

a hydrogen atom,

a straight-chain or branched-chain alkyl, alkenyl or alkynyl group with up to 10 carbon atoms,

whereby R^{20} and R^{21} do not both simultaneously mean methyl.

or one of the groupings

-D-C_nF_{2n+1}, whereby D is a straight-chain or branched-chain alkylene, alkenylene or alkinylene group with up to 8 carbon atoms and n is an integer from 1 to 8,

D-aryl, whereby D has the already indicated meaning, and aryl stands for a phenyl, 1- or 2-naphthyl radical or a heteroaryl radical that is optionally substituted in one or two places,

-L-CH=CF-C_pF_{2p+1}, whereby L is a straight-chain or branched-chain alkylene, alkenylene or alkinylene group with up to 7 carbon atoms and p is an integer from 1 to 7,

whereby in the three cases above in D or L, a methylene group can be replaced by a sulfur atom, a sulfone group or a sulfoxide group,

-D-O-(CH₂)_q-aryl, whereby D and aryl have the already indicated meanings, and q is 0, 1, 2 or 3,

-D-O-(CH₂)_r-C_nF_{2n+1}, whereby D and n have the already indicated meanings, and r stands for an integer from 1 to 5,

whereby in addition in all relevant cases above, R²¹ together with D with the inclusion of the nitrogen atom can then form a pyrrolidine ring that is substituted in 2- or 3-position,

or

R²⁰ and R²¹ with the nitrogen atom to which they are bonded form a saturated or unsaturated heterocyclic compound with 5

or 6 chain links, which optionally contains one or two additional heteroatoms, selected from nitrogen, oxygen and sulfur, and optionally is substituted,

and

R^{17a} in α - or β -position means a hydrogen atom, a C₁₋₅ alkyl, a C₂₋₅ alkenyl or a C₂₋₅ alkynyl group or a trifluoromethyl group, or together with the radical OR^{17b} means a keto-oxygen atom, and

R^{17b} means a hydrogen atom or a radical of partial formula R^{17'}--C(O)--, in which R^{17'} means a hydrogen atom or a hydrocarbon radical with up to 8 carbon atoms.

2. (Previously Presented) An 11 β -substituted estratriene according to claim 1, in which R³ is a hydrogen atom.

3. (Previously Presented) An 11 β -substituted estratriene according to claim 1, in which R³ is a benzoyl radical.

4. (Previously Presented) An 11 β -substituted estratriene according to claim 1, in which R^{17b} is a hydrogen atom.

5. (Not Entered, Currently Amended) An 11 β -substituted estratriene according to claim 1, in which R¹¹ is selected from the group of the following side chains

-(CH₂)₅N(CH₃)-(CH₂)₃-S-(CH₂)₃C₂F₅,

-(CH₂)₅NH-(CH₂)₃-S-(CH₂)₃C₂F₅,

-(CH₂)₅N(CH₃)(CH₂)₃-S-CH₂-2-Pyridyl,

- $(\text{CH}_2)_5\text{N}(\text{CH}_3)-(\text{CH}_2)_3-\text{SO}-\text{CH}_2-2\text{-Pyridyl}$,
- $(\text{CH}_2)_5\text{N}(\text{CH}_3)-(\text{CH}_2)_3-\text{S}-\text{CH}_2-p\text{-CF}_3\text{-Phenyl}$,
- $(\text{CH}_2)_5\text{N}(\text{CH}_3)-(\text{CH}_2)_3-\text{SO}-\text{CH}_2-p\text{-CF}_3\text{-Phenyl}$,
 $(\text{CH}_2)_5-[2\text{-pyrrolidine-1-yl}]-\text{CH}_2-\text{S}-p\text{-CF}_3\text{-Phenyl}$,
 $(\text{CH}_2)_5-[2\text{-pyrrolidine-1-yl}]-\text{CH}_2-\text{SO}-p\text{-CF}_3\text{-Phenyl}$,
- $(\text{CH}_2)_5\text{N}(\text{CH}_3)(\text{CH}_2)_3\text{C}_2\text{F}_5$,
- $(\text{CH}_2)_5\text{N}(\text{CH}_3)(\text{CH}_2)_6\text{C}_2\text{F}_5$,
- $(\text{CH}_2)_5\text{N}(\text{CH}_3)(\text{CH}_2)_7\text{C}_2\text{F}_5$,
- $(\text{CH}_2)_5\text{N}(\text{CH}_3)(\text{CH}_2)_8\text{C}_2\text{F}_5$,
- $(\text{CH}_2)_6\text{N}(\text{CH}_3)(\text{CH}_2)_6\text{C}_2\text{F}_5$,
- $(\text{CH}_2)_6\text{N}(\text{CH}_3)(\text{CH}_2)_7\text{C}_2\text{F}_5$,
- $(\text{CH}_2)_6\text{N}(\text{CH}_3)(\text{CH}_2)_8\text{C}_2\text{F}_5$,
- $(\text{CH}_2)_5\text{N}(\text{CH}_3)(\text{CH}_2)_2\text{C}_4\text{F}_9$,
- $(\text{CH}_2)_5\text{N}(\text{CH}_3)(\text{CH}_2)_3\text{C}_6\text{F}_{13}$,
- $(\text{CH}_2)_5\text{N}(\text{CH}_3)(\text{CH}_2)_3\text{C}_8\text{F}_{17}$,
- $(\text{CH}_2)_5\text{N}(\text{CH}_3)(\text{CH}_2)_6\text{C}_4\text{F}_9$,
- $(\text{CH}_2)_5\text{N}(\text{CH}_3)(\text{CH}_2)_6\text{C}_6\text{F}_{13}$,
- $(\text{CH}_2)_5\text{N}(\text{CH}_3)(\text{CH}_2)_6\text{C}_8\text{F}_{17}$,
- $(\text{CH}_2)_5\text{N}(\text{CH}_3)\text{H}$,
- $(\text{CH}_2)_5\text{N}(\text{CH}_3)(\text{CH}_2)_9\text{H}$,
- $(\text{CH}_2)_5\text{N}(\text{CH}_3)\text{CH}_2\text{CH}=\text{CF}-\text{C}_2\text{F}_5$,
- $(\text{CH}_2)_5\text{N}(\text{CH}_3)\text{CH}_2\text{CH}=\text{CF}-\text{C}_3\text{F}_7$,
- $(\text{CH}_2)_5\text{N}(\text{CH}_3)\text{CH}_2\text{CH}=\text{CF}-\text{C}_5\text{F}_{11}$,
- $(\text{CH}_2)_5\text{N}(\text{CH}_3)\text{CH}_2\text{CH}=\text{CF}-\text{C}_7\text{F}_{15}$,
- $(\text{CH}_2)_5-1\text{-Pyrrolidinyl}$,
- $(\text{CH}_2)_5\text{N}(\text{CH}_3)(\text{CH}_2)_3\text{OPhenyl}$,
- $(\text{CH}_2)_5\text{N}(\text{CH}_3)(\text{CH}_2)_3\text{OBenzyl}$,
- $(\text{CH}_2)_5\text{N}(\text{CH}_3)(\text{CH}_2)_3\text{O}(\text{CH}_2)_3\text{C}_2\text{F}_5$,
- $(\text{CH}_2)_5\text{N}(\text{CH}_3)(\text{CH}_2)_3\text{CH}(\text{CH}_3)_2$,
- $(\text{CH}_2)_5\text{N}(\text{CH}_3)(\text{CH}_2)_3\text{-Pyridyl}$,
- $(\text{CH}_2)_5\text{N}(\text{CH}_3)(\text{CH}_2)_3\text{-Phenyl}$,
- $(\text{CH}_2)_5\text{N}(\text{CH}_3)(\text{CH}_2)_{32}p\text{-Tolyl}$,

$-(CH_2)_5N(CH_3)(CH_2)_{32}$ -p-ethoxyphenyl,
 $-(CH_2)_5N(CH_3)(CH_2)_3$ -p-Tolyl,
 $-(CH_2)_5N(CH_3)(CH_2)_3$ -p-Chlorophenyl, or
 $-(CH_2)_5N(CH_3)(CH_2)_3$ -O-CH₂-Phenyl.

6. (Not Entered, Currently Amended) ~~A compound~~ An 11 β -substituted estratriene of claim 1 which is

11 β -[5-(methyl{3-[(4,4,5,5,5-pentafluoropentyl)sulfanyl]-propyl}amino)pentyl]estra-1,3,5(10)-triene-3,17 β -diol,

11 β -(5-{3-[(4,4,5,5,5-pentafluoropentyl)sulfanyl]-propylamino}pentyl)estra-1,3,5(10)-triene-3,17 β -diol,

11 β -[5-(methyl{3-[(2-pyridylmethyl)sulfanyl]propyl}-amino)pentyl]estra-1,3,5(10)-triene-3,17 β -diol,

11 β -[5-[(methyl{3-[(2-pyridylmethyl)sulfenylsulfanyl]propyl}-amino~~amine~~)pentyl]estra-1,3,5(10)-triene-3,17 β -diol,

11 β -[5-(methyl{3-[4-(trifluoromethyl)benzylsulfanyl]-propyl}-~~amine~~amino)pentyl]estra-1,3,5(10)-triene-3,17 β -diol,

11 β -[5-(methyl{3-[4-(trifluoromethyl)benzylsulfinyl]propyl}-amino)pentyl]estra-1,3,5(10)-triene-3,17 β -diol,

11 β -{5-[(2S)-2-{[4-(trifluoromethyl)phenyl]sulfanyl-methyl}pyrrolidine-1-yl]pentyl}estra-1,3,5(10)-triene-3,17 β -diol,

11 β -{5-[(2S)-2-{[4-(trifluoromethyl)phenyl]sulfinyl-methyl}pyrrolidine-1-yl]pentyl}estra-1,3,5(10)-triene-3,17 β -diol,

11 β -{5-[methyl-(8,8,9,9,9-pentafluoro-nonyl)amino]-pentyl}-estra-1,3,5(10)-triene-3,17 β -diol,

11 β -{5-[methyl-nonyl-amino]pentyl}-estra-1,3,5(10)-triene-3,17 β -diol,

11 β -{5-[methyl-(9,9,10,10,10-pentafluoro-decyl)-amino]-pentyl}-estra-1,3,5(10)-triene-3,17 β -diol,

11 β -{6-[methyl-(8,8,9,9,9-pentafluoro-nonyl)-amino]-hexyl}-estra-1,3,5(10)-triene-3,17 β -diol,

11 β -{6-[methyl-(9,9,10,10,10-pentafluoro-decyl)-amino]-hexyl}-estra-1,3,5(10)-triene-3,17 β -diol,

11 β -[5-(methyl-amino)-pentyl]-estra-1,3,5(10)-triene-3,17 β -diol,

11 β -(5-pyrrolidine-1-yl-pentyl)-estra-1,3,5(10)-triene-3,17 β -diol,

11 β -{5-[methyl-(4,4,5,5,5-pentafluoro-pentafluoro-pentyl)-amino]-pentyl}-estra-1,3,5(10)-triene-3,17 β -diol,

11 β -{5-[methyl-(4,4,5,5,6,6,7,7,8,8,9,9,9-tridecafluoro-nonyl)-amino]-pentyl}-estra-1,3,5(10)-triene-3,17 β -diol,

11 β -{5-[(4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,11-heptadecafluoro-undecyl)-methyl-amino]-pentyl}-estra-1,3,5(10)-triene-3,17 β -diol,

11 β -{5-[methyl-(3,3,4,4,5,5,6,6,6-nonafluoro-hexyl)-amino]-pentyl}-estra-1,3,5(10)-triene-3,17 β -diol,

11 β -{5-[methyl-(7,7,8,8,8-pentafluoro-octyl)-amino]-pentyl}-estra-1,3,5(10)-triene-3,17 β -diol,

11 β -{6-[methyl-(7,7,8,8,8-pentafluoro-octyl)-amino]-hexyl}-estra-1,3,5(10)-triene-3,17 β -diol,

11 β -{5-[methyl-(7,7,8,8,9,9,10,10,10-nonafluoro-decyl)-amino]-pentyl}-estra-1,3,5(10)-triene-3,17 β -diol,

11 β -{5-[methyl-(7,7,8,8,9,9,10,10,11,11,12,12,12-tridecafluoro-dodecyl)-amino]-pentyl}-estra-1,3,5(10)-triene-3,17 β -diol,

11 β -{5-[(7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-heptadecafluoro-tetradecyl)-methyl-amino]-pentyl}-estra-1,3,5(10)-triene-3,17 β -diol,

11 β -{5-[(3,4,4,5,5,5-hexafluoro-pent-2-enyl)-methyl-amino]-pentyl}-estra-1,3,5(10)-triene-3,17 β -diol,

11 β -{5-[(3,4,4,5,5,6,6,7,7,8,8,8-dodecafluoro-oct-2-enyl)-methyl-amino]-pentyl}-estra-1,3,5(10)-triene-3,17 β -diol,

11 β -{5-[(3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-hexadecafluoro-dec-2-enyl)-methyl-amino]-pentyl}-estra-1,3,5(10)-triene-3,17 β -diol,

11 β -{5-[methyl-(3-phenoxy-propyl)-amino]-pentyl}-estra-1,3,5(10)-triene-3,17 β -diol,

11 β -{5-[(3-benzyloxy-propyl)-methyl-amino]-pentyl}-estra-1,3,5(10)-triene-3,17 β -diol,

11 β -{5-{[N-methyl-N-3-(4,4,5,5,5-pentafluoropentyloxy)-propylamino]-pentyl}-estra-1,3,5(10)-triene-3,17 β -diol,

11 β -{5-[methyl-(2-p-tolyl-ethyl)-amino]-pentyl}-estra-1,3,5(10)-triene-3,17 β -diol,

11 β -{5-{[2-(4-ethoxy-phenyl)-ethyl]-methyl-amino}-pentyl}-estra-1,3,5(10)-triene-3,17 β -diol,

11 β -{5-[methyl-(3-phenyl-propyl)-amino]-pentyl}-estra-1,3,5(10)-triene-3,17 β -diol,

11 β -{5-[methyl-(3-pyridin-3-yl-propyl)-amino]-pentyl}-estra-1,3,5(10)-triene-3,17 β -diol,

11 β -{5-[methyl-(3-p-tolyl-propyl)-amino]-pentyl}-estra-1,3,5(10)-triene-3,17 β -diol,

11 β -{5-{[3-(4-chloro-phenyl)-propyl]-methyl-amino}-pentyl}-estra-1,3,5(10)-triene-3,17 β -diol,

11 β -(5-{[3-(4-ethoxy-phenyl)-propyl]-methyl-amino}-pentyl)-estra-1,3,5(10)-triene-3,17 β -diol, or

11 β -{5-[methyl-(4-methyl-pentyl)-amino]-pentyl}-estra-1,3,5(10)-triene-3,17 β -diol.

7. **(Previously Presented)** A pharmaceutical agent comprising a 11 β -long-chain-substituted estratriene according to claim 1.

8. **(Previously Presented)** A pharmaceutical composition comprising at least one compound of formula I according to claim 1 and a pharmaceutically compatible vehicle.

9. **(Previously Presented)** An 11 β -substituted estratriene according to claim 1, wherein R^{17a} is a methyl, an ethenyl or an ethynyl.

10. **(Previously Presented)** An 11 β -substituted estratriene according to claim 1, wherein R^{17a} is in the α -position.

11. **(Not Entered, Currently Amended)** A method of providing an antiestrogenic action comprising administration of an effective amount of a compound according to claim 1 to a patient in need thereof.

12. (Not Entered, Currently Amended) A method of treating estrogen-dependent tumors comprising administering an effective amount of a compound according to claim 1 to a patient in need thereof.

13. (Canceled)

14. (Previously Presented) A method of treating osteoporosis, or pre-, peri- or post-menopause comprising administering an effective amount of a compound according to claim 1 to a patient in need thereof.

15. (Previously Presented) A method of providing hormone replacement therapy comprising administering an effective amount of a compound according to claim 1 to a patient in need thereof.

16. (Previously Presented) A method of treating breast cancer, endometrial cancer, prostate cancer, prostatic hyperplasia, anovulatory infertility, melanoma, male hair loss, diffuse alopecia, hirsutism, endometriosis, or endometrial carcinomas by administering an effective amount of a compound according to claim 1 to a patient in need thereof.